

Salahaddin University-Erbil

College of Agricultural Engineering Sciences

Department of Field Crops and Medicinal Plants



Course Book of

**Range managements
Fourth stage
Field Crops and Medicinal Plants Dept.**

**Second Semester
2023-2024**

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Lecturer**

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Course objectives:

This course focuses on major aspects of range managements. Range management is a professional field whose aim is to ensure a sustained yield of rangeland products while protecting and improving the basic range resources of soil, water, and plant and animal life. Besides producing forage for domestic and wild animals, a range can provide timber, minerals, natural beauty, and recreational opportunities. Modern range management utilizes the concept of multiple use, which requires that all the resources of a rangeland be managed simultaneously, using constant monitoring and adjustments to provide a mix of material products and intangible assets that best satisfy the needs of both landowners and the general public.

The main objectives are:

1. To understand the role of range managements on providing good grazing and caring capacity.
2. To know the most commonly vegetation cover survey methods.
3. To be familiar with most modern grazing system that conducted around the world.
4. To learn the most important terms on range managements.
5. To be able to utilize the above information to solve real problems facing livestock producers.

References:

Archer, Edward, Gregory A. Hand, and Steven N. Blair. "Validity of US nutritional surveillance: National Health and Nutrition Examination Survey caloric energy intake data, 1971–2010." *PloS one* 8, no. 10 (2013): e76632.

Archer, S.R., 2010. Rangeland conservation and shrub encroachment: new perspectives on an old problem. *Wild rangelands: Conserving wildlife while maintaining livestock in semi-arid ecosystems*, pp.53-97.

Bredenkamp, G.J., Spada, F. and Kazmierczak, E., 2002. On the origin of northern and southern hemisphere grasslands. *Plant Ecology*, 163(2), pp.209-229.

Agriculture and Forestry

<http://www.agric.gov.ab.ca/app21/rtw/index.jsp>

Agriculture and Forestry Agro-Climatic Information Service:

<http://agriculture.alberta.ca/acis/>

Alberta Agriculture and Forestry Website: Alberta Soil Information Centre and Soil Viewer :

[http://www1.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/sag6903](http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/sag6903)

Alberta Environment and Parks – Rangeland Resource Stewardship Section:

<http://aep.alberta.ca/lands-forests/grazing-range-management/default.aspx>

a) Grazing Lease Stewardship Code of Practice

b) Range Health Assessment

c) Range Plant Community Guides and Stocking Rates

d) Rangeland Stewardship

•e.g. Beneficial Grazing Management Practices for Sage Grouse and Ecology of Silver Sagebrush in Southeastern Alberta

Syllabus:

1st week

Introduction, Definitions and Characteristics of Rangeland

2nd week

Rangeland ecology and animal behaviour and Factors that define Grasslands

3rd week

Pastures in Iraq and Kurdistan Region

4th week

Plant Succession and Community Composition in Range Ecosystem

5th week

Grazing behaviour of livestock and wildlife

6th week

Exam

7^h week

Range Inventory and Methods of Vegetation Analysis or Species Inventory Listing

8th week

Determination of Carrying Capacity and Grazing Capacity

9th week

Range Condition Classification/ Concept and Definition

10th week

Range Improvement and Grazing System (TYPES)

11th week

Principle of weed control in pasture lands (continued)

12th week

Fire as a Management Tool (controlled burning):

13th week

Exam

14th week

Grazing Management

14th week

Grazing Management (continued)

Grading:

During the semester, the students are required to conduct two tests in theoretical lectures. There are 10 marks test and 5 marks for activities, quizzes and presence and 50 marks for final exam.

• **Sample of questions:**

Define the following terms below:

1. Pasture
2. Pampas
3. Tundra
4. Avoidance mechanisms
5. Tolerance mechanisms

Write the comparison between two of the followings:

1. Rangeland and pastureland
2. Grazing capacity and carrying capacity
3. Palatability and preference

Fill-in the following blanks:

1. The effects of defoliation may be positive or negative on rangeland, which are explain below.
 - a. Plant morphology: 1....., 2.....

b. Plant physiology: 1..... 2.....

c. Seed production: 1..... 2.....

2. There are many characterise of rangeland, list only four of them:

a.....,b.....c.....d.....